CBCS SCHEME

USN ☐☐☐☐☐☐☐☐☐☐   **18AU55**

Fifth Semester B.E. Degree Examination, Feb./Mar. 2022
Automotive Transmission

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1   a. Sketch and explain the construction and working of centrifugal clutch.   **(10 Marks)**
    b. What is the need of a clutch? What are the requirements of a good clutch?   **(10 Marks)**

OR

2   a. Explain the construction and working of single plate clutch.   **(10 Marks)**
    b. List out the clutch troubles and give appropriate reasons.   **(10 Marks)**

Module-2

3   a. With a neat sketch, explain the construction and working principle of a fluid flywheel.   **(10 Marks)**
    b. With a neat sketch, explain the construction and working principle of a single stage torque converter.   **(10 Marks)**

OR

4   a. Discuss with a neat sketch the construction features and working of over running clutch.   **(10 Marks)**
    b. Define torque converter. Explain the working of multistage torque converter with neat sketch.   **(10 Marks)**

Module-3

5   a. Briefly discuss the various resistance to motion of the automobile.   **(10 Marks)**
    b. Describe the variation of tractive effort and total resistance with the speed of the vehicle with the help of graph.   **(10 Marks)**

OR

6   a. Draw a neat sketch and explain the construction and working of synchromesh unit used in gear box.   **(10 Marks)**
    b. Sketch and explain the working principle of 3 speed constant Mesh gear box.   **(10 Marks)**

Module-4

7   a. Sketch and explain the working principle of overdrive and also mention its advantages.   **(10 Marks)**
    b. With a neat sketch, explain the construction and working of Wilson gear box for various gear ratios.   **(10 Marks)**

OR

8 a. Briefly explain the principle of simple epicyclic gear train with sketch. Show that more number of gear ratio are possible from it. **(10 Marks)**

b. The input shaft of an epicyclic type of gearbox has two sun wheels each with 25 teeth splined to the shaft. Their corresponding annuli have 100 teeth each. The output shaft has a sun running free on that shaft with 40 teeth, while the corresponding annulus has 80 teeth. Calculate, the first, second and reverse gear ratios. **(10 Marks)**

Module-5

9 a. With a neat sketch, explain the working principle of variable displacement pump. **(10 Marks)**

b. What are the limitation and advantages of hydrostatic drives? **(10 Marks)**

OR

10 a. With a neat diagram, explain the working of Borg Warner automatic transmission system. **(10 Marks)**

b. Discuss the functions of the hydraulic control in an epicyclic planetary gear system. **(10 Marks)**

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